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Massachusetts Lobster Fishery Statistics

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MASSACHUSETTS
DIVISION OF MARINE FISHERIES

1986
Massachusetts
Lobster Fishery
Statistics

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Technical Series 21

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The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
James S. Hoyte, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
Walter E. Bickford, Commissioner
Division of Marine Fisheries
Philip G. Coates, Director

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INTRODUCTION

The commercial lobster fishery of Massachusetts is, economically, the most important fishery conducted within the territorial waters of the Commonwealth. The overall economic importance of the fishery both in New England and, in recent years, the Mid-Atlantic states, has focused the attention of Federal, Regional and State fishery managers on this species. Initially, in an attempt to standardize management of the fishery, the Federal and State Governments developed an overall lobster fishery management plan under the auspices of the State-Federal Partnership Program. However, with the passage of the Fisheries Management and Conservation Act, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, has developed and implemented a management plan for the entire east coast lobster fishery. The basis and success of any such plan is an accurate statistical data base. The Commonwealth of Massachusetts, with joint funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen for many years. Historically, the data collected was used primarily for descriptive and informational purposes, and occasionally for management. However, with the recent emphasis on Federal management, these data take on added importance in terms of providing the respective management agencies with adequate information to insure that the interests of Massachusetts' lobstermen are protected.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited, by law, to 1300, with an additional ten percent issued to proven hardship cases. In 1981, a statutory change provided for the establishment of a permanent waiting list from which 100 new permits were issued. In addition, 30 special additional permits were awarded to full time commercial fishermen who met certain criteria. In subsequent years 80 list permits and 20 special additional permits have been issued. Permits which are not renewed are retired.

This report is the twentieth annual publication of data summarized from catch reports submitted by licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, presentation was changed to reflect a more thorough collection and evaluation of the submitted information. This publication represents the first year in which data processing and evaluation were completely computerized. As a result new data, previously unobtainable due to the sheer weight of hand-generated computation, is now readily available. This publication perpetuates the existing time series, and expands upon areas not addressed in previous years. All data elements presented in previous reports are presented here, although they may not be in the same tabular format. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information should be made to the Division's Statistics Project.

This report has been prepared by personnel from the Division of Marine Fisheries Statistics Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Commercial Fisheries Research and Development Act (Public Law 88-309). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires for her arduous work in checking, editing and entering the reports into the computer; to Gerald Nash for writing the computer programs to generate the results presented in this and future publications and to Charles Anderson for his help in guiding system development, acquisition of hardware and software and for his comments and suggestions concerning this publication.

SOURCE OF DATA

No person may fish for or take lobsters in coastal waters or land lobsters in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster taken; areas fished; principal ports of landing; and information relative to the vessels used in the fishery. Recreational fishermen are asked to report on their license renewal application form only the number of lobsters taken during the previous year. However, due to data entry problems, recreational information is not available at the time of publication. An addendum will be published when it is available.

Each year 150 Coastal Lobstermen are selected and audited for the records used to complete the catch portion of their catch report. The Division does this to assess the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year.

Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of September 14, 1987, and are not expanded to represent all of the permits issued in 1986.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is "inshore" which represents data pertaining to all lobster activity taking place within 69 degrees West Longitude and 41 degrees North Latitude; the "offshore" category refers to all data outside those coordinates (Area 13 on Figure 5). This is not to be confused with the offshore license category which allows fishermen to harvest lobster outside the territorial waters line (3 miles from shore), a line that falls within the coordinates given above.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobsters harvested are presented by the port of landing reported by the fishermen. In the past, this information was broken down and presented in one table per county. This year all counties are combined in one table and include selected data elements. For example, Table 3 contains number of fishermen, pounds harvested and value for all counties both inshore and off. Although it requires a reduced format, it is felt this is more readable.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of its use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.18 pounds per lobster was used to calculate poundage figures. This factor is based on historical data.

Where tables refer to county, the reader is referred to Figure 8. Fishing areas are delineated in Figure 5.

1986 HIGHLIGHTS

1. There were 14,188 lobster licenses of all types issued during 1986: 1,803 coastal commercial; 711 offshore commercial; 171 seasonal commercial and 11,503 non-commercial. As of September 14, 1987, a total of 243 licensed commercial lobstermen (9 percent) failed to file a catch report with the Division. Of the 2,442 commercial fishermen who reported, 642 or 24 percent

claimed they did not fish for lobster during 1986. See Table 1 for a summary of the reporting status.

2. A total of 14,690,452 pounds of lobsters were reported landed by commercial lobstermen. Based on a value of $2.51 per pound[1], the commercial catch was valued at $36,873,035.

3. In total pounds of lobsters landed, Essex County ranked first, Plymouth County second and Suffolk County third. In total numbers of active commercial fishermen, Essex County ranked first with 739, Plymouth County second with 408 and Barnstable County third with 187. See Tables 3 and 6.

4. In the commercial fishery, pots were valued at $13,904,118[2], diving gear at $58,787, and power and non-power boats at $46,405,049, yielding a total gear value of $60,367,954. Combined with the value of lobsters sold, $36,873,035, gives a total fishery value of $97,240,989.

5. Of the 14,690,452 pounds of lobsters landed commercially, 12,918,388 were reported taken inside of 69 degrees West and 41 degrees North, and of that number, 10,634,231 pounds were estimated to have been taken within the territorial waters of the Commonwealth.

6. Boston ranked first in number of pounds harvested but second in number of active fishermen. Gloucester ranked first in number of fishermen but second in pounds landed. See Table 6 for a breakdown by town.

7. Landings by commercial fishermen were concentrated during the months June through November when 90 percent of the yearly harvest was landed. This seasonal trend reflects mainly the efforts of coastal lobstermen who reported harvesting approximately 80 percent of the total commercial catch during that time period. See Figures 1 and 2 and Table 8 for a complete breakdown by month for each license type.

8. According to coastal lobstermen the greatest harvest of lobsters taken inside 69 degrees West and 41 degrees North was from the Boston Harbor area (Area 4) followed by the Beverly - Salem - Marblehead area (Area 3) and the Plymouth area (Area 5). See Figures 3 and 4 and Table 9 for a complete breakdown by area for each license type.

9. The average catch per trap haul for coastal lobstermen was .6907 pounds. For traps fished one set-over day the average was .4483; for those fished two days 0.6239; and for three days 0.6661. See figures 6 and 7 for catch effort information by month and area.

10. Last year the fishermen selected for audit reported harvesting 933,078 pounds of lobster on their 1985 catch reports. The audit of their actual records showed total landings of 932,321 pounds, a difference of 757 pounds or 0.08 percent.

Random audit of the 1986 reports was taking place at time of publication.

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[1]Ex-vessel price determined by weighted averages of prices listed in the National Marine Fisheries Service "Blue Sheet."

[2]Based on an average value of $32.50 per pot, including warp and buoys.

Table 1. 1986 Massachusetts Commercial Lobster Fishery
Reporting Status of Lobster Licensees

	Licenses Issued	
Coastal Commercial	($200)	1,803
Offshore Commercial	($200)	711
Seasonal Commercial	($ 50)	171
Non-Commercial	($ 30)	11,503
Total		14,188

	Reporting Status		
Type	Not Reporting	Reported "Not Fishing"	Reported "Fishing"
Coastal Commercial	26 (1%)	359 (20%)	1,418 (79%)
Offshore Commercial	147 (21%)	270 (38%)	294 (41%)
Seasonal Commercial	70 (41%)	13 (8%)	88 (51%)
Total	243 (9%)	642 (24%)	1,800 (67%)

Non-Commercial figures unavailable at time of printing.

Table 2. Massachusetts Commercial Lobster Fishery
Selected Licensing Information, 1982 - 1986

	1982	1983	1984	1985	1986	% Change 1982-86
Coastal Licenses						
Issued	1,538	1,609	1,697	1,744	1,803	17.23
Percent Change		4.62	5.47	2.77	3.38	
Fished	1,277	1,312	1,353	1,368	1,418	11.04
Percent Change		2.74	3.13	1.11	3.65	
Not Reporting	22	28	30	27	26	18.18
Percent Change		27.27	7.14	-10.00	-3.70	
% Not Reporting	1	2	2	2	1	
Offshore Licenses						
Issued	514	560	688	673	711	38.33
Percent Change		8.95	22.86	-2.18	5.65	
Fished	132	146	174	167	294	122.73
Percent Change		10.61	19.18	-4.02	76.05	
Not Reporting	109	120	159	159	147	34.86
Percent Change		10.09	32.50	0.00	-7.55	
% Not Reporting	21	21	23	24	21	
Student Licenses						
Issued	274	267	227	188	171	-37.59
Percent Change		-2.55	-14.98	-17.18	-9.04	
Fished	150	132	116	108	88	-41.33
Percent Change		-12.00	-12.12	-6.90	-18.52	
Not Reporting	113	117	92	65	70	-38.05
Percent Change		3.54	-21.37	-29.35	7.69	
% Not Reporting	41	44	41	35	41	

Table 3. 1986 Massachusetts Commercial Lobster Fishery Statistics -- Number of Fishermen and Harvest (Lbs.)

AREA:	Inside 69°W 41°N (Areas 1-12)							Outside 69°W 41°N (Area 13)				
LICENSE TYPE:	COASTAL			SEASONAL	OFFSHORE		TOTAL	COASTAL	OFFSHORE		TOTAL	GRAND TOTAL
--COUNTY--	Diver	Potman	Both	Potman	Potman	Trawler		Potman	Potman	Trawler		
BARNSTABLE												
Fishermen	6	129	5	9		27	176	4		3	7	187 *
Pounds	10,873	681,814	13,843	1,642	142,598	50,613	901,383	166,512	470,332	36,913	673,757	1,575,140
Value ($)	27,291	1,711,353	34,746	4,121	357,921	127,039	2,262,471	417,945	1,180,533	92,652	1,691,130	3,953,601
BRISTOL												
Fishermen		77			6	24	107	5	8	47	60	169 *
Pounds		395,286		227	17,563	21,345	434,421	102,733	423,230	56,385	582,348	1,016,769
Value ($)		992,168		570	44,083	53,576	1,090,397	257,860	1,062,307	141,526	1,461,693	2,552,090
DUKES												
Fishermen		27			3		30					33 *
Pounds		92,525		264	24,846	518	118,153	3,690			3,690	121,843
Value ($)		232,238		663	62,363	1,300	296,564	9,262			9,262	305,826
ESSEX												
Fishermen		594	12	33	4	71	714	4		17	21	739 *
Pounds	315	5,466,161	37,939	11,149	10,104	138,236	5,663,904	65,184	190,475	46,601	302,260	5,966,164
Value ($)	791	13,720,064	95,227	27,984	25,361	346,972	14,216,399	163,612	478,092	116,969	758,673	14,975,072
NANTUCKET												
Fishermen		4				4						6 *
Pounds		38,507		75		2,588	41,170	6,341		80	6,421	47,591
Value ($)		96,653		188		6,496	103,337	15,916		201	16,117	119,453
NORFOLK												
Fishermen		67	4	5			76					78 *
Pounds	1,226	871,105	8,784	1,637	20		882,772	1,046			1,046	883,818
Value ($)	3,077	2,186,474	22,048	4,109	50		2,215,758	2,625			2,625	2,218,383
PLYMOUTH												
Fishermen		328	12	35	12	19	406					408 *
Pounds	98	2,773,307	123,523	9,251	17,555	46,615	2,970,349	15,958	24,707	218	40,883	3,011,232
Value ($)	246	6,961,001	310,043	23,220	44,063	117,004	7,455,576	40,055	62,015	547	102,616	7,558,192
SUFFOLK												
Fishermen		132				14	146		1	15	16	166 *
Pounds	19,048	1,828,035	11,680	955	398	46,120	1,906,236	108,471		53,188	161,659	2,067,895
Value ($)	47,810	4,588,368	29,317	2,397	999	115,761	4,784,652	272,262		133,502	405,764	5,190,416
STATE TOTAL												
Fishermen	11	1,358	34	88	29	157	1,677	14	13	82	109	1,786 *
Pounds	31,560	12,146,740	195,769	25,200	213,084	306,035	12,918,388	469,935	1,108,744	193,385	1,772,064	14,690,452
Value ($)	79,216	30,488,317	491,380	63,252	534,841	768,148	32,425,154	1,179,537	2,782,947	485,396	4,447,881	36,873,035
OUT OF STATE												
Fishermen						5	5			5	5	14 *
Pounds		12,477			3,877		16,354		125,497		125,497	141,851
Value ($)		31,317			9,731		41,049		314,997		314,997	356,046

* Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Table 4. 1986 Massachusetts Commercial Lobster Fishery Statistics -- Number of Boats and Pots Fished

AREA:	Inside 69°W 41°N (Areas 1-12)							Outside 69°W 41°N (Area 13)				
LICENSE TYPE:	COASTAL			SEASONAL	OFFSHORE		TOTAL	COASTAL	OFFSHORE		TOTAL	GRAND TOTAL
--COUNTY--	Diver	Potman	Both	Potman	Potman	Trawler		Potman	Potman	Trawler		
BARNSTABLE												
Pots Fished		30,453	743	195	1,200		32,591	2,446	2,550		4,996	37,587
Power Boat	5	128	5	7	2	27	174	4	2	3	9	183
Non Power Boat		1					1				0	1
BRISTOL												
Pots Fished		18,374		40	1,110		19,524	3,480	8,085		11,565	31,089
Power Boat		76		2	6	23	107	5	8	47	60	167
Non Power Boat							0				0	0
DUKES												
Pots Fished		3,738		49	1,000		4,787	196			196	4,983
Power Boat		27		1	3	1	32				0	32
Non Power Boat				1			1				0	1
ESSEX												
Pots Fished		163,202	1,583	692	690		166,167	5,482	2,940		8,422	174,589
Power Boat	1	580	12	31	4	70	698	4	2	17	23	721
Non Power Boat		4		2			6				0	6
NANTUCKET												
Pots Fished		1,038		10			1,048				0	1,048
Power Boat		5		1		1	7				0	7
Non Power Boat							0				0	0
NORFOLK												
Pots Fished		22,846	250	125	6		23,227	20			20	23,247
Power Boat	1	67	3	5	1		77				0	77
Non Power Boat			1				1				0	1
PLYMOUTH												
Pots Fished		92,446	3,776	724	1,804		98,750	1,055			1,055	99,805
Power Boat		330	12	31	12	19	404	1			1	405
Non Power Boat		8		1			9				0	9
SUFFOLK												
Pots Fished		53,259	380	25	50		53,714	357	1,400		1,757	55,471
Power Boat	1	126	1	1	1	14	144		1	15	16	160
Non Power Boat							0				0	0
STATE TOTAL												
Pots Fished		385,356	6,732	1,860	5,860		399,808	13,036	14,975		28,011	427,819
Power Boat	8	1,339	33	79	29	155	1,643	14	13	82	109	1,752
Non Power Boa	0	13	1	4	0	0	18	0	0	0	0	18
OUT OF STATE												
Pots Fished		250			120		370		1,200		1,200	1,570
Power Boat		1			2	5	8		1	5	6	14
Non Power Boat							0				0	0

Table 5. 1986 Massachusetts Commercial Lobster Fishery Statistics -- Diving Gear and Boat Value ($)

AREA:	Inside 69°W 41°N (Areas 1-12)							Outside 69°W 41°N (Area 13)				
LICENSE TYPE:	COASTAL			SEASONAL	OFFSHORE		TOTAL	COASTAL	OFFSHORE		TOTAL	GRAND
--COUNTY--	Diver	Potman	Both	Potman	Potman	Trawler		Potman	Potman	Trawler		TOTAL
BARNSTABLE												
Diving Gear	9,778		3,548				13,326				0	13,326
Power Boat	34,620	2,280,945	164,850	69,323	630,000	734,298	3,914,036	805,850	550,000	34,750	1,390,600	5,304,636
Non Power Boat		1,000					1,000				0	1,000
BRISTOL												
Diving Gear							0				0	0
Power Boat		2,083,236		13,550	145,350	369,625	2,611,761	1,015,000	2,165,922	1,255,655	4,436,577	7,048,338
Non Power Boat							0				0	0
DUKES												
Diving Gear							0				0	0
Power Boat		1,135,685		800	133,250	15,000	1,284,735				0	1,284,735
Non Power Boat				300			300				0	300
ESSEX												
Diving Gear	4,500		16,700				21,200				0	21,200
Power Boat	75,000	13,691,058	120,173	63,060	133,648	507,958	14,590,897	452,750	1,800,000	352,990	2,605,740	17,196,637
Non Power Boat		1,300		1,160			2,460				0	2,460
NANTUCKET												
Diving Gear							0				0	0
Power Boat		88,060		5,000		70,000	163,060				0	163,060
Non Power Boat							0				0	0
NORFOLK												
Diving Gear	5,000		3,853				8,853				0	8,853
Power Boat	20,000	1,884,416	16,000	9,550	15,000		1,944,966				0	1,944,966
Non Power Boat			200				200				0	200
PLYMOUTH												
Diving Gear	1,000		10,378				11,378				0	11,378
Power Boat		7,387,299	209,340	155,336	346,700	86,600	8,185,275	150,000			150,000	8,335,275
Non Power Boat		12,244		50			12,294				0	12,294
SUFFOLK												
Diving Gear	4,000		30				4,030				0	4,030
Power Boat	30,000	3,917,756	50,000	600	30,400	170,346	4,199,102		350,000	562,046	912,046	5,111,148
Non Power Boat							0				0	0
STATE TOTAL												
Diving Gear	24,278		34,509				58,787				0	58,787
Power Boat	159,620	32,468,455	560,363	317,219	1,434,348	1,953,827	36,893,832	2,423,600	4,865,922	2,205,441	9,494,963	46,388,795
Non Power Boat	0	14,544	200	1,510	0	0	16,254	0	0	0	0	16,254
OUT OF STATE												
Diving Gear							0				0	0
Power Boat		30,000			23,250	40,500	93,750		500,000	77,648	577,648	671,398
Non Power Boat							0				0	0

Table 6. 1986 Massachusetts Commercial Lobster Fishery Statistics -- Number of Fishermen (Except Seasonal) and Harvest by Homeport, Inside and Outside 69°W 41°N

-- TOWN --	NUMBER FISHERMEN	RANK (FISHERMEN)	POUNDS INSIDE	POUNDS OUTSIDE	POUNDS TOTAL	PERCENT OF TOTAL	RANK (TOTAL LBS.)
BARNSTABLE	6	32	163,636	238,116	401,752	2.74	16
BEVERLY	54	10	829,665	23,305	852,970	5.82	3
BOSTON	133	2	1,601,036	161,659	1,762,695	12.02	1
BOURNE	11	27	58,215		58,215	0.40	35
CHATHAM	23	21	114,447	25,441	139,888	0.95	23
CHILMARK	17	25	95,659	3,690	99,349	0.68	29
COHASSET	47	11	704,194	1,046	705,240	4.81	6
DANVERS	8	30	60,600		60,600	0.41	33
DARTMOUTH	8	30	10,396		10,396	0.07	47
DENNIS-BREWSTER	18	24	58,675		58,675	0.40	34
DUXBURY	6	32	48,890		48,890	0.33	37
ESSEX	11	27	14,631		14,631	0.10	43
FAIRHAVEN	35	15	63,096	249,860	312,956	2.13	19
FALMOUTH	9	29	15,409		15,409	0.11	42
GLOUCESTER	249	1	1,302,731	253,704	1,556,435	10.61	2
GOSNOLD	4	34	5,685		5,685	0.04	49
HARWICH	6	32	19,733	108,157	127,890	0.87	25
HINGHAM	26	19	485,466		485,466	3.31	12
HULL	40	13	334,264	324	334,588	2.28	17
IPSWICH-ROWLEY	26	19	51,889		51,889	0.35	36
KINGSTON	11	27	32,363		32,363	0.22	41
LYNN	20	22	317,393	2,441	319,834	2.18	18
MANCHESTER	34	16	282,989		282,989	1.93	20
MARBLEHEAD	63	8	586,592	1,824	588,416	4.01	8
MARSHFIELD	85	4	769,932		769,932	5.25	5
MATTAPOISETT	10	28	36,494	6,954	43,448	0.30	39
NAHANT	32	17	499,138		499,138	3.40	11
NANTUCKET	5	33	41,095	6,421	47,516	0.32	38
NEW BEDFORD	83	5	142,330	102,144	244,474	1.67	21
NEWBURY-NEWBURYPORT	23	21	78,561		78,561	0.54	30
OAK BLUFFS-EDGARTOWN	3	35	3,296		3,296	0.02	50
ORLEANS-EASTHAM	19	23	99,586	98	99,684	0.68	28
PLYMOUTH	117	3	782,981	33,387	816,368	5.57	4
PROVINCETOWN	40	13	126,866	6,716	133,582	0.91	24
QUINCY	16	26	76,224		76,224	0.52	31
REVERE-CHELSEA	8	30	105,788		105,788	0.72	26
ROCKPORT	66	7	400,476	18,160	418,636	2.85	15
SALEM	17	25	71,038	475	71,513	0.49	32
SALISBURY	8	30	12,657	41	12,698	0.09	46
SANDWICH	30	18	219,474	295,229	514,703	3.51	9
SAUGUS	56	9	632,128	2,310	634,438	4.33	7
SCITUATE	69	6	433,237	218	433,455	2.96	14
SWAMPSCOTT	39	14	512,267		512,267	3.49	10
TISBURY	7	31	13,249		13,249	0.09	45
TRURO	8	30	9,475		9,475	0.06	48
WAREHAM-MARION	9	29	37,470		37,470	0.26	40
WELLFLEET	5	33	13,426		13,426	0.09	44
WESTPORT-FALL RIVER	41	12	218,371	230,344	448,715	3.06	13
WEYMOUTH	10	28	100,717		100,717	0.69	27
WINTHROP	24	20	198,458		198,458	1.35	22
YARMOUTH	3	35	800		800	0.01	51
STATEWIDE TOTAL	1,698		12,893,188	1,772,064	14,665,252		
OUT OF STATE	14		16,354	125,497	141,851		

Table 7. Massachusetts Commercial Lobster Fishery
Selected Landings and Effort Statistics, 1982 - 1986

	1982	1983	1984	1985	1986	% Change 1982-86
Total Pounds Harvested	11,152,564	12,136,607	12,259,311	14,203,083	14,690,452	31.72
Percent Change		8.82	1.01	15.86	3.43	
Inshore Catch	9,638,188	10,356,607	10,088,499	12,399,745	12,918,388	34.03
Percent Change		7.45	-2.59	22.91	4.18	
Territorial Catch	8,244,805	8,654,914	8,019,727	10,303,792	10,634,231	28.98
Percent Change		4.97	-7.34	28.48	3.21	
Total Traps Fished	331,658	350,567	386,764	404,662	427,819	28.99
Percent Change		5.70	10.33	4.63	5.72	
Inshore Traps	319,098	334,867	354,888	375,172	399,808	25.29
Percent Change		4.94	5.98	5.72	6.57	
Average Value	2.28	2.44	2.61	2.47	2.51	10.09
Percent Change		7.02	6.97	-5.36	1.62	
Total Value	$25,427,846	$29,613,321	$31,996,802	$35,081,615	$36,873,035	45.01
Percent Change		16.46	8.05	9.64	5.11	
Inshore Value	$21,975,069	$25,270,121	$26,330,982	$30,627,370	$32,425,154	47.55
Percent Change		14.99	4.20	16.32	5.87	
Ave.Catch/Trap-Haul	0.55	0.582	0.505	0.649	0.6907	25.58
Percent Change		5.82	-13.23	28.51	6.43	
Ave. Lbs./Trap	33.63	34.62	31.70	35.10	34.34	2.12
Percent Change		2.95	-8.44	10.73	-2.17	

Figure 1. 1986 Massachusetts Commercial Lobster Fishery
Total Monthly Inshore Harvest by License Type

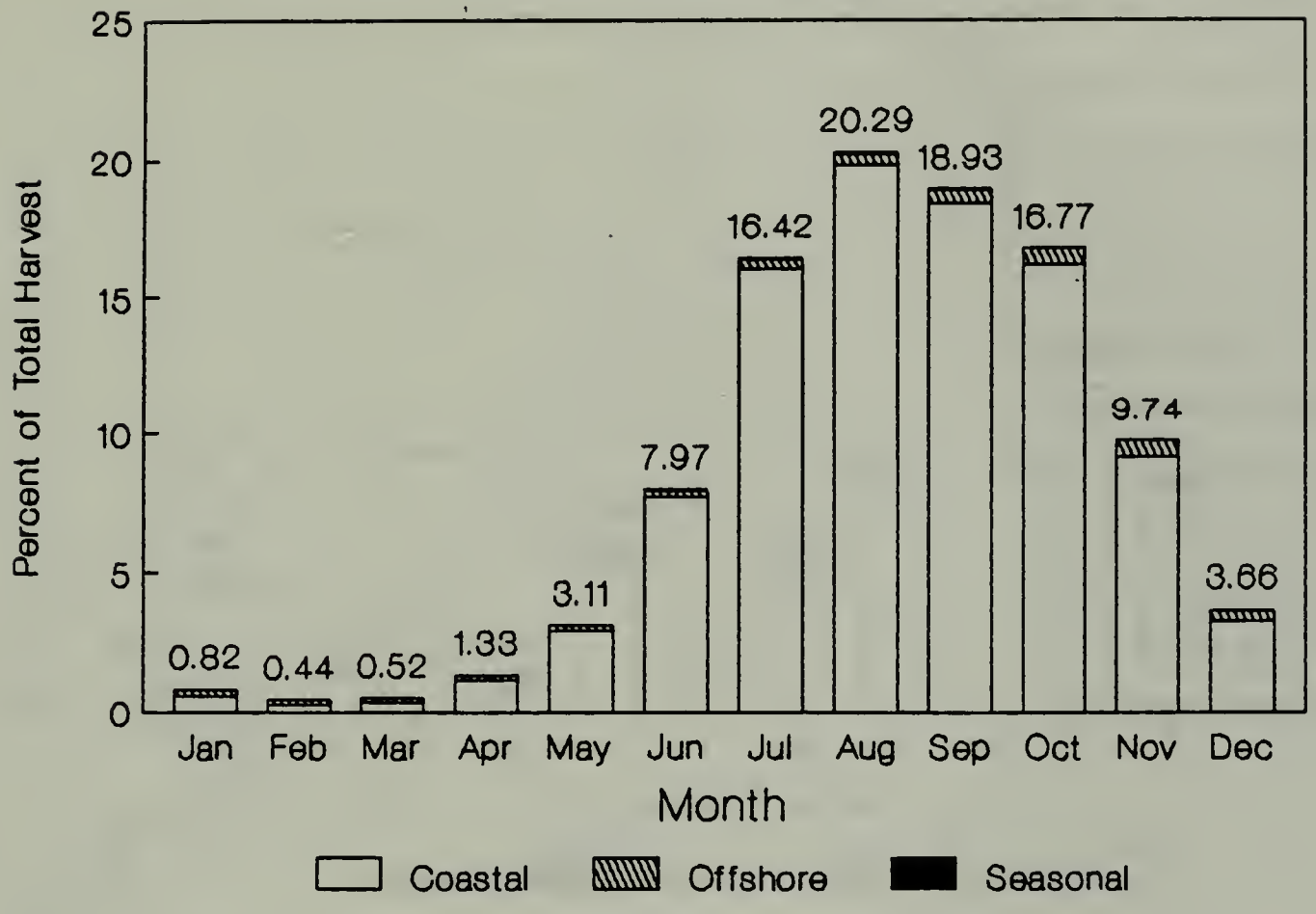


Figure 2. 1986 Massachusetts Commercial Lobster Fishery
Monthly Inshore Harvest for Each License Type

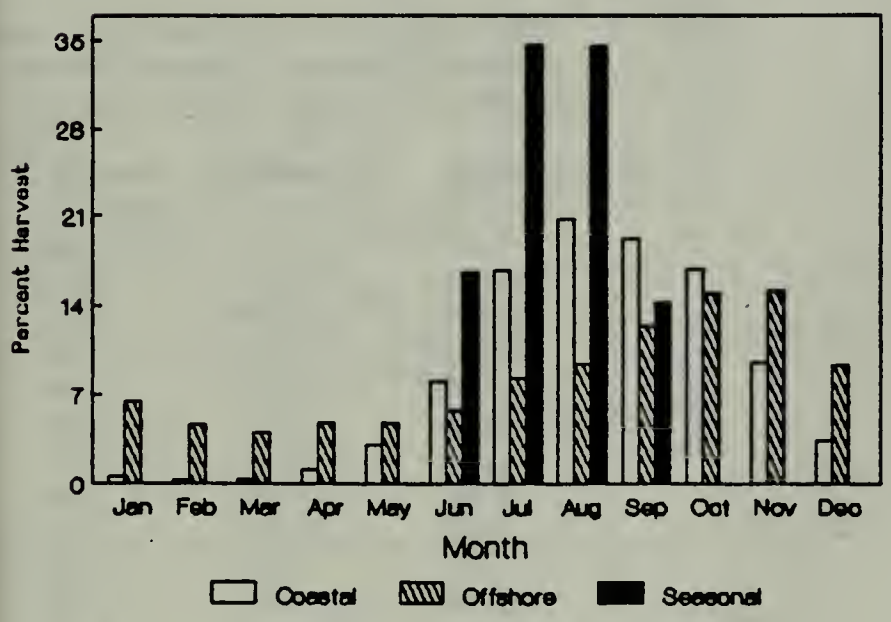


Table 8. 1986 Massachusetts Commercial Lobster Fishery; Percent Monthly Inshore Harvest for Each License Type

Month	Coastal	Offshore	Seasonal
January	0.59	6.44	
February	0.26	4.64	
March	0.38	4.02	
April	1.19	4.83	
May	3.05	4.79	
June	8.04	5.80	16.60
July	16.72	8.32	34.64
August	20.72	9.41	34.50
September	19.22	12.41	14.26
October	16.88	14.94	
November	9.53	15.07	
December	3.42	9.33	
Total	100	100	100

Figure 3. 1986 Massachusetts Commercial Lobster Fishery

Total Inshore Harvest by Area Fished and License Type

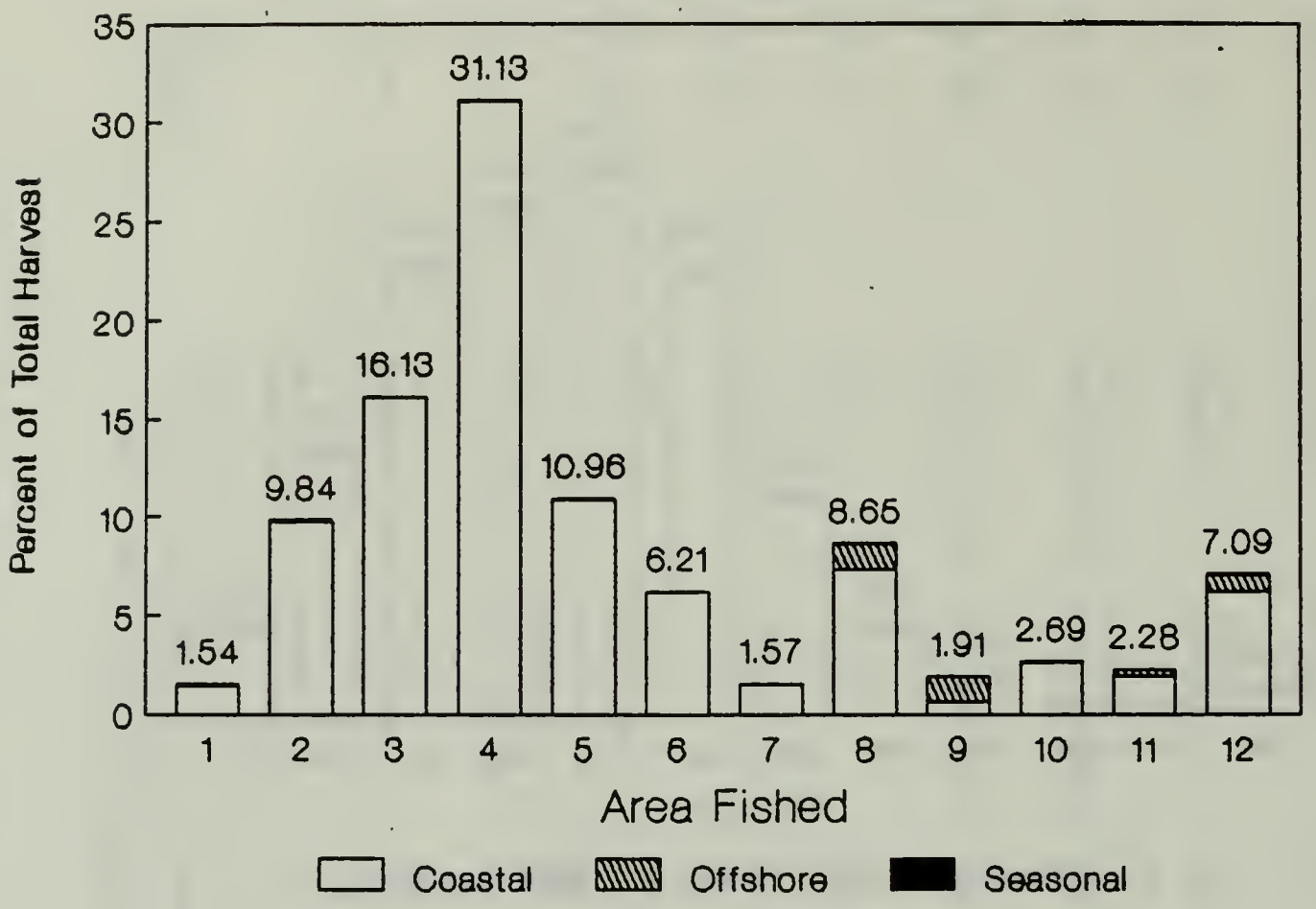


Figure 4. 1986 Massachusetts Commercial Lobster Fishery

Inshore Harvest by Area Fished and for Each License Type

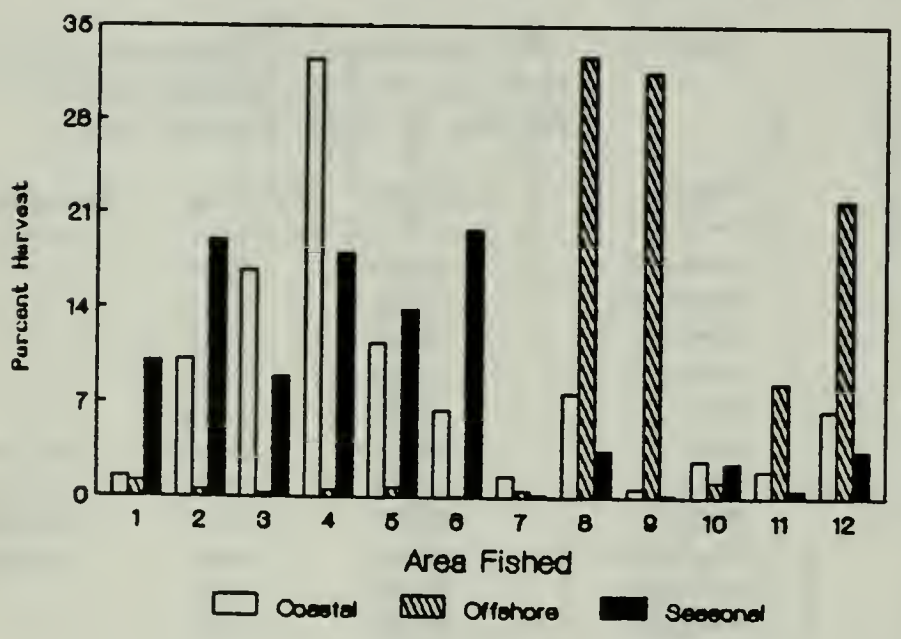


Table 9. 1986 Massachusetts Commercial Lobster Fishery; Percent Inshore Harvest by Area for Each License Type

Area	Coastal	Offshore	Seasonal
1	1.53	1.17	10.08
2	10.21	0.63	18.96
3	16.79	0.37	8.92
4	32.42	0.63	17.95
5	11.38	0.75	13.90
6	6.43	0.07	19.74
7	1.62	0.49	0.17
8	7.66	32.65	3.46
9	0.69	31.54	0.15
10	2.75	1.21	2.57
11	2.03	8.51	0.62
12	6.48	21.99	3.48
Total	100	100	100

Lobstering Areas

Between Areas	Boundaries
1 & 2	Castle Neck, ipswich
2 & 3	Goldsmith Point, Manchester
3 & 4	Red Rock, Lynn
4 & 5	Tobias Ledge (Spindle), Scituate
5 & 6	High Pines Ledge, Plymouth
6 & 7	Scussett Beach, Sandwich
7 & 8	Griffin Island, Wellfleet
8 & 9	Harwich/Chatham Line
9 & 10	Waquoit Bay, Falmouth — Cape Poge, M.V. — Muskeget island
10 & 11	Mass./R.I. Line — Gay Head

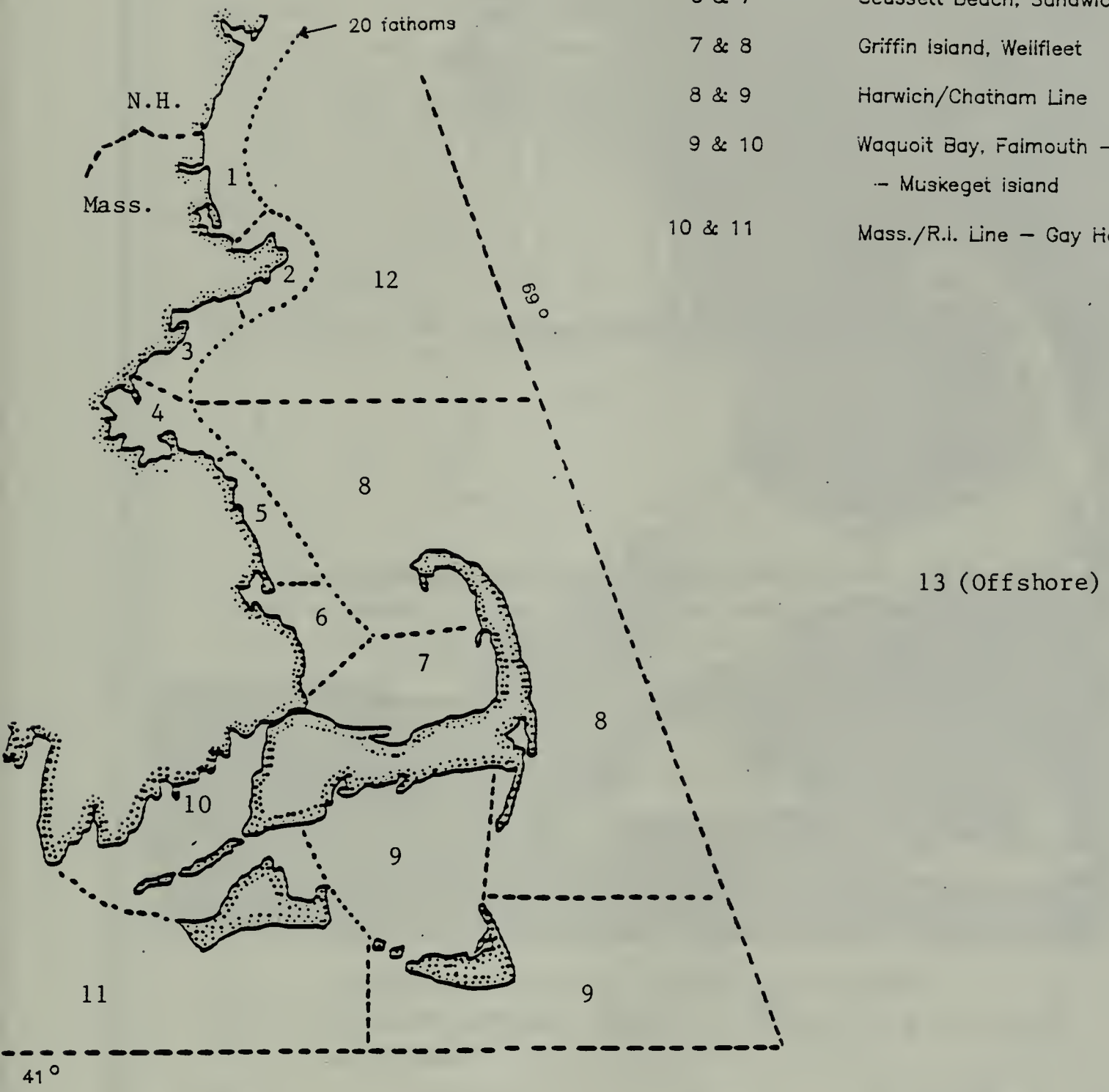


Figure 5. Location and Description of Coastal Lobster Fishing Areas in Massachusetts

Figure 6. 1986 Massachusetts Commercial Lobster Fishery
Catch Per Unit of Effort For All License Types by Area

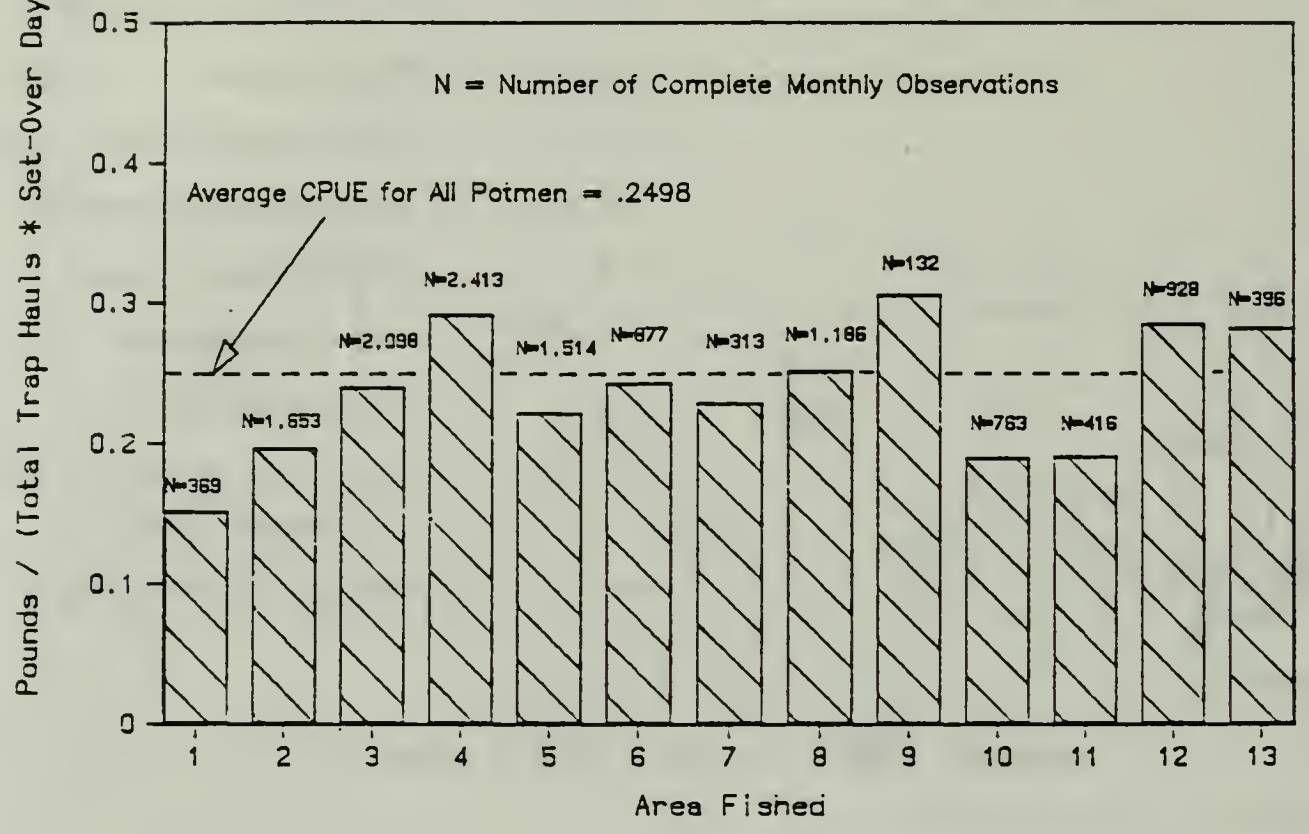
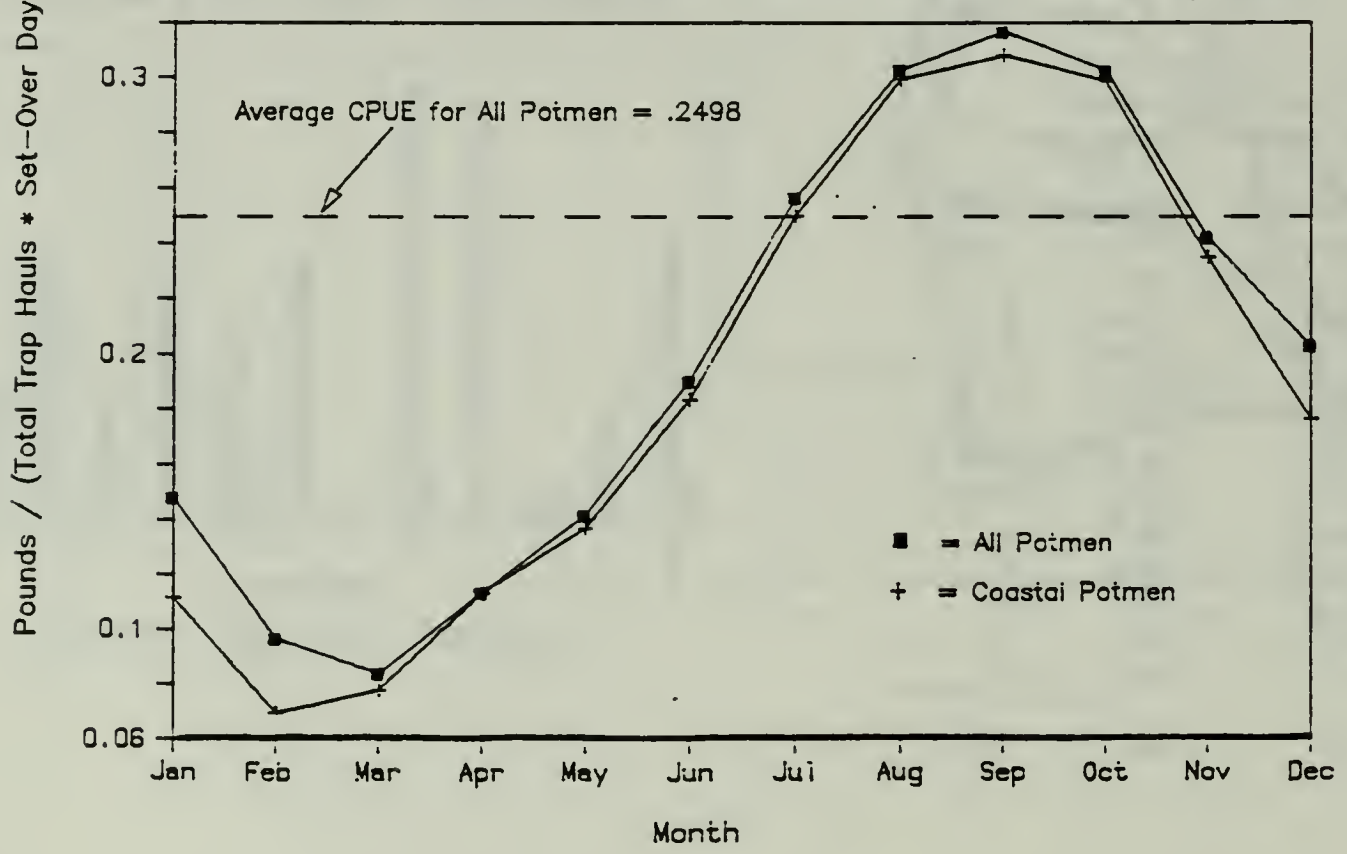


Figure 7. 1986 Massachusetts Commercial Lobster Fishery
Catch Per Unit of Effort for Both Coastal and All Potmen by Month



COASTAL MAP of MASSACHUSETTS
SHOWING STATISTICAL REPORTING AREAS (Counties)

1. Essex	3. Norfolk	5. Bristol	7. Dukes
2. Suffolk	4. Plymouth	6. Barnstable	8. Nantucket

Figure 8.